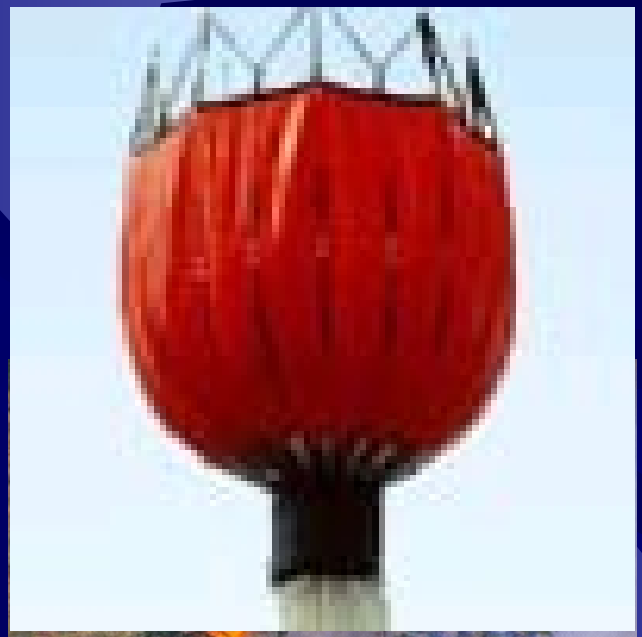
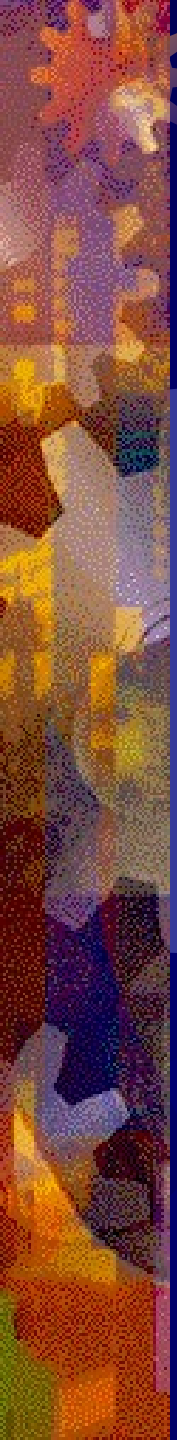
Bambi Bucket

Model # 6578

with
Torrentula Valve



CW5 Pete Davis



Disclaimer:

Every pixel of this presentation was begged, borro
stolen from someone but I’m not going to name th
I want it to appear to be my own work.

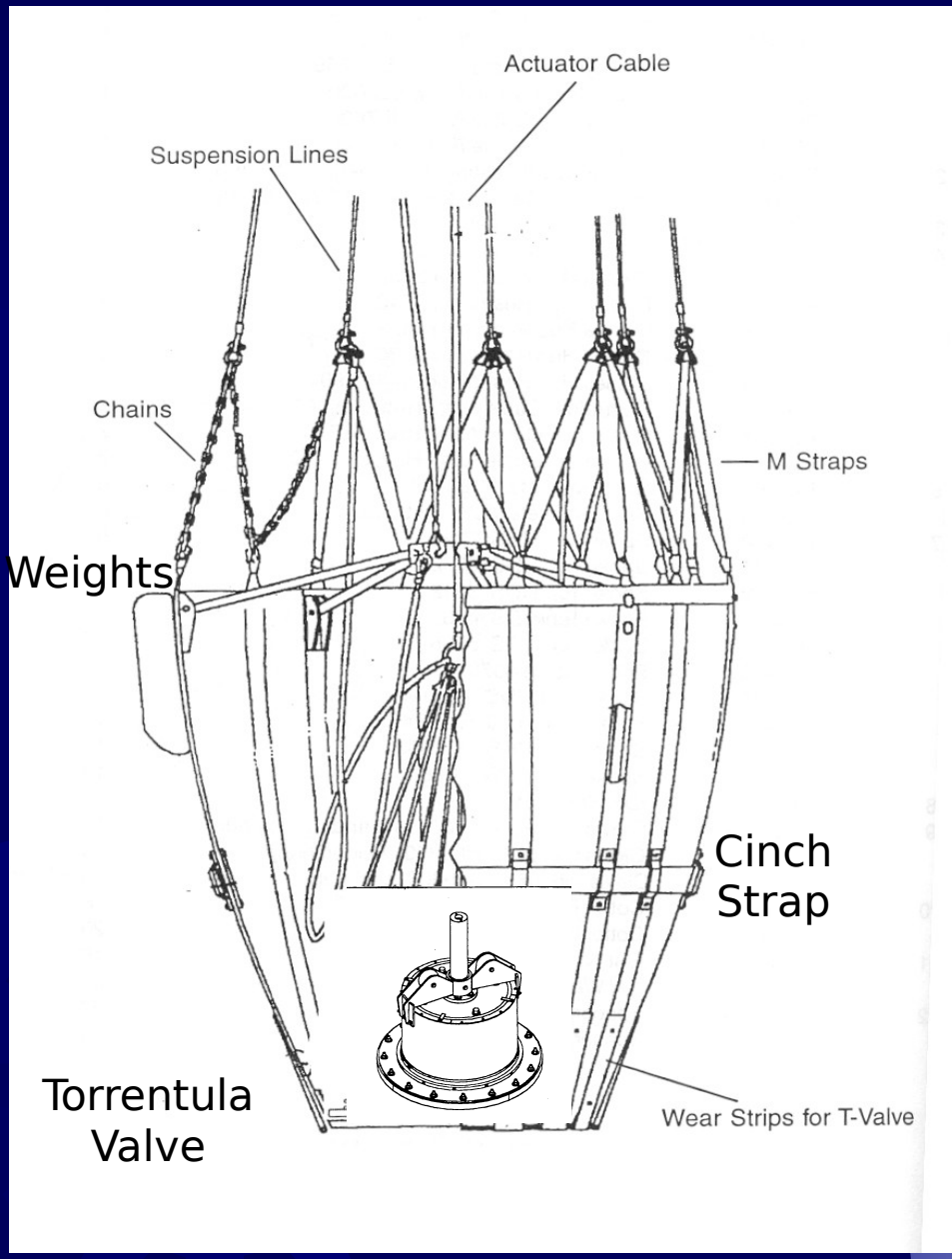
Peter Davis

Agenda

- Introduction
- Description
- Operation
- Warnings and Cautions
- Pre-flight Inspection

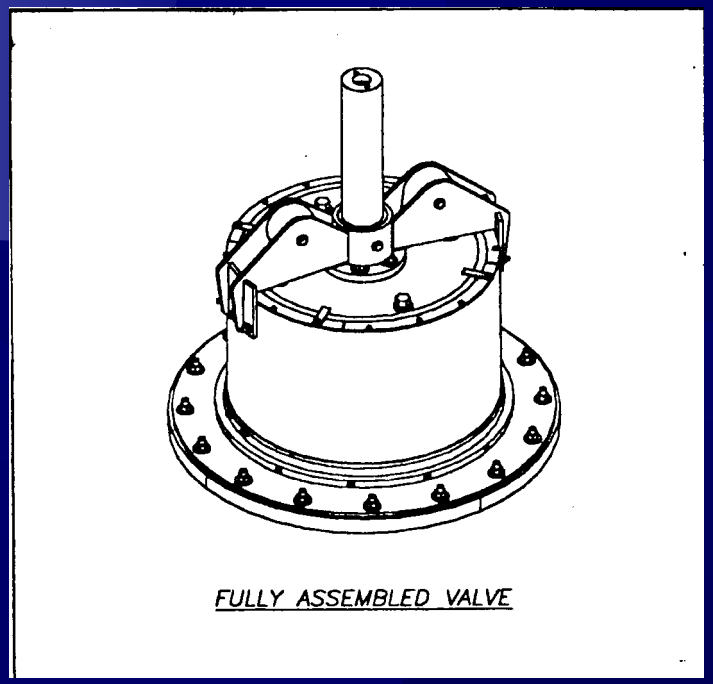
- Manufactured since 1983
- Used by over 600 companies worldwide
- 22 Different models for helicopters
  - Robinson R-44 > Boeing Vertol 234
  - 72 Gal > 2600 Gal

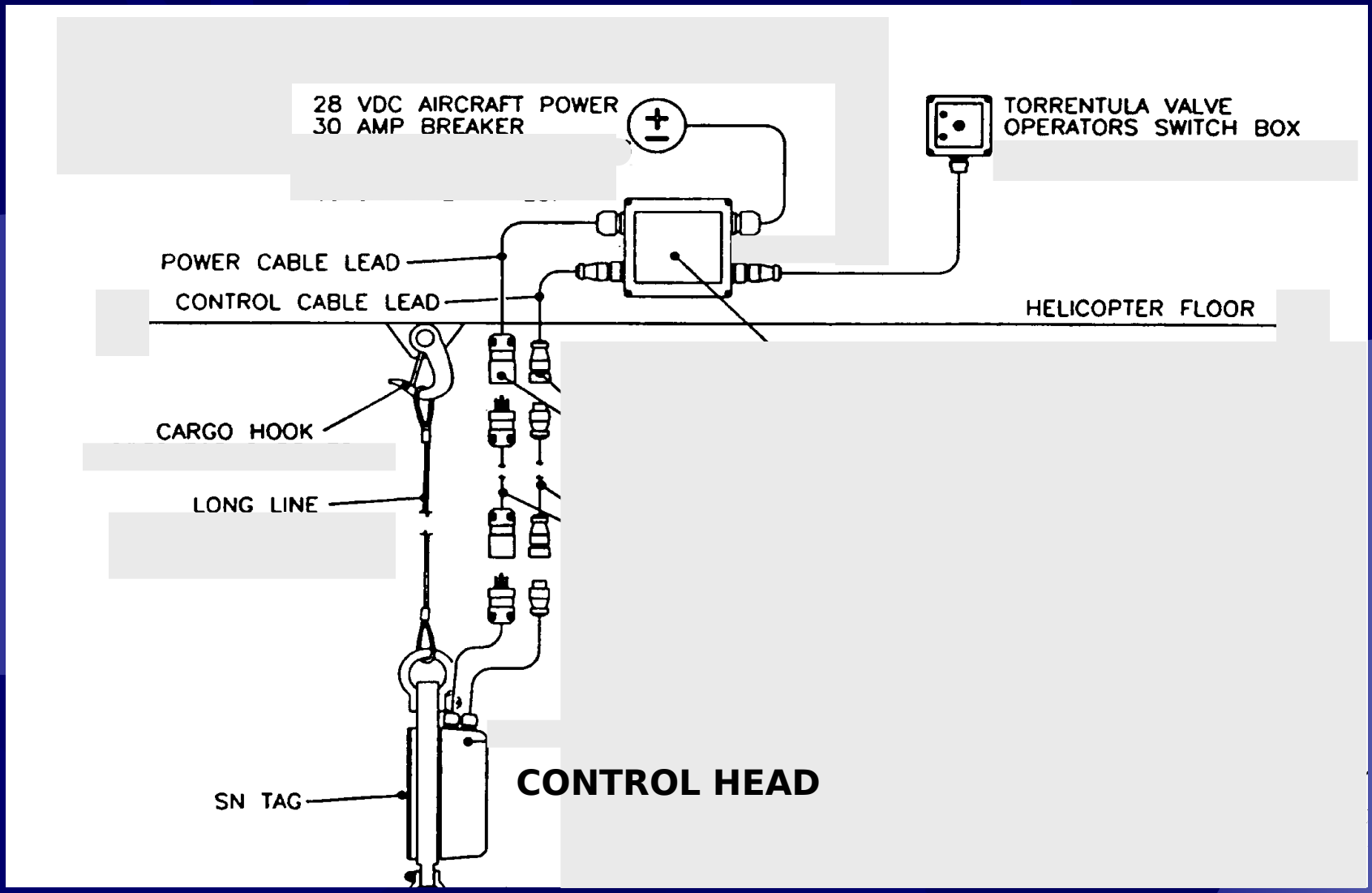
Suspension Lines
Actuator Cable
Weights
Cinch Strap
Torrentula Valve

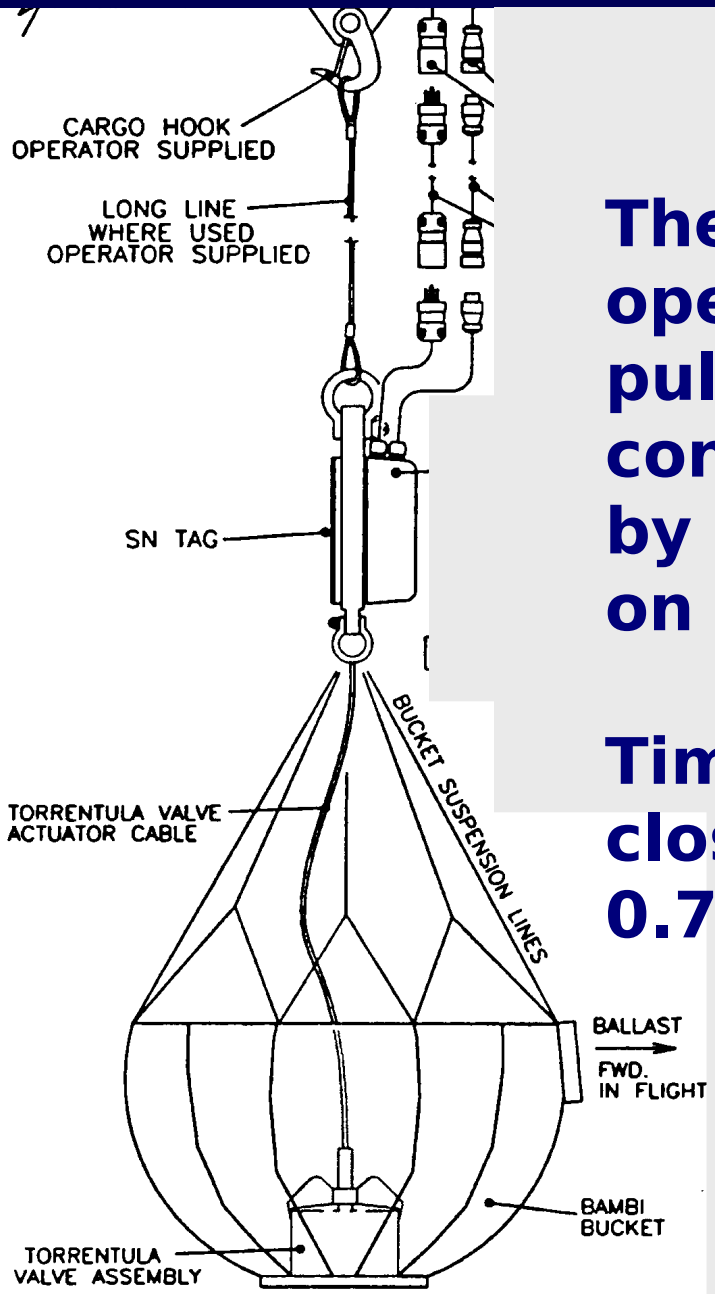


The Torrentula Valve attached to the bottom of the Bucket allows the operator to have a variable flow and / or multiple drops of water from the bucket.

The bucket can be bottom filled in shallow water b the valve open until filled.




28 VDC AIRCRAFT POWER
30 AMP BREAKER
TORRENTULA VALVE
OPERATORS SWITCH BOX
POWER CABLE LEAD
CONTROL CABLE LEAD
HELICOPTER FLOOR
CARGO HOOK
LONG LINE
SN TAG
CONTROL HEAD

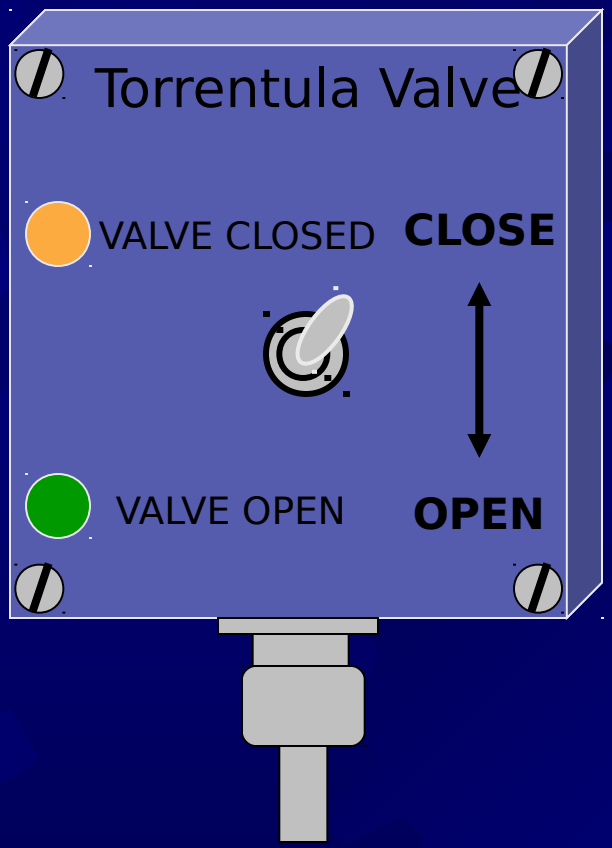


The Torrentula Valve is opened by a stainless st pull cable activated at th control head. It's clo by the constant force on on the top of the valve.

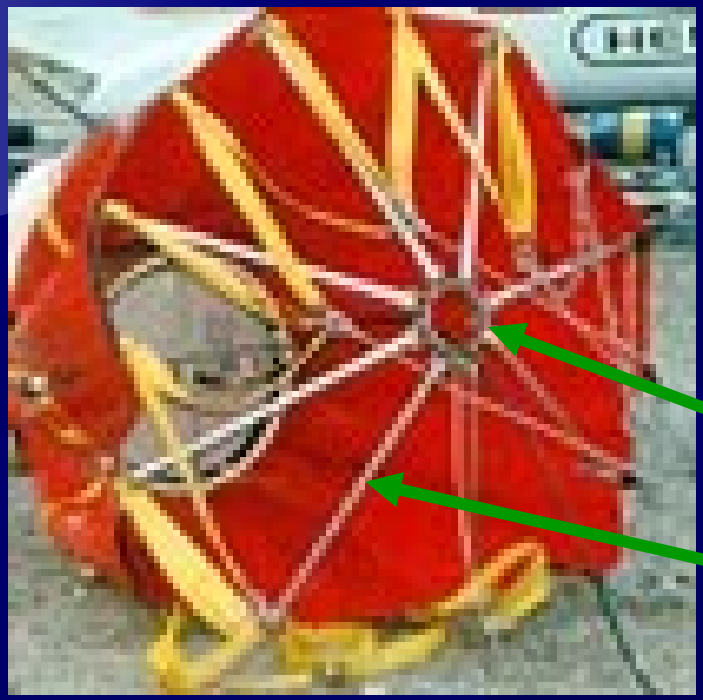
Time from full open to fu closed is approximately 0.75 seconds.

Control Panel
(Operator's switch box)

4" x 4"



The instant deployment system (IDS) uses a hub and spoke
mechanism to expand the mouth of the bucket as the suspension cables take the weight of the bucket. It must be deployed before checking the operation of the T-valve



To deploy, grasp the hub a
pull outward until the two
from the hub to the lower
shell are tight.

Dimensions:

Empty Wt. 476 lbs

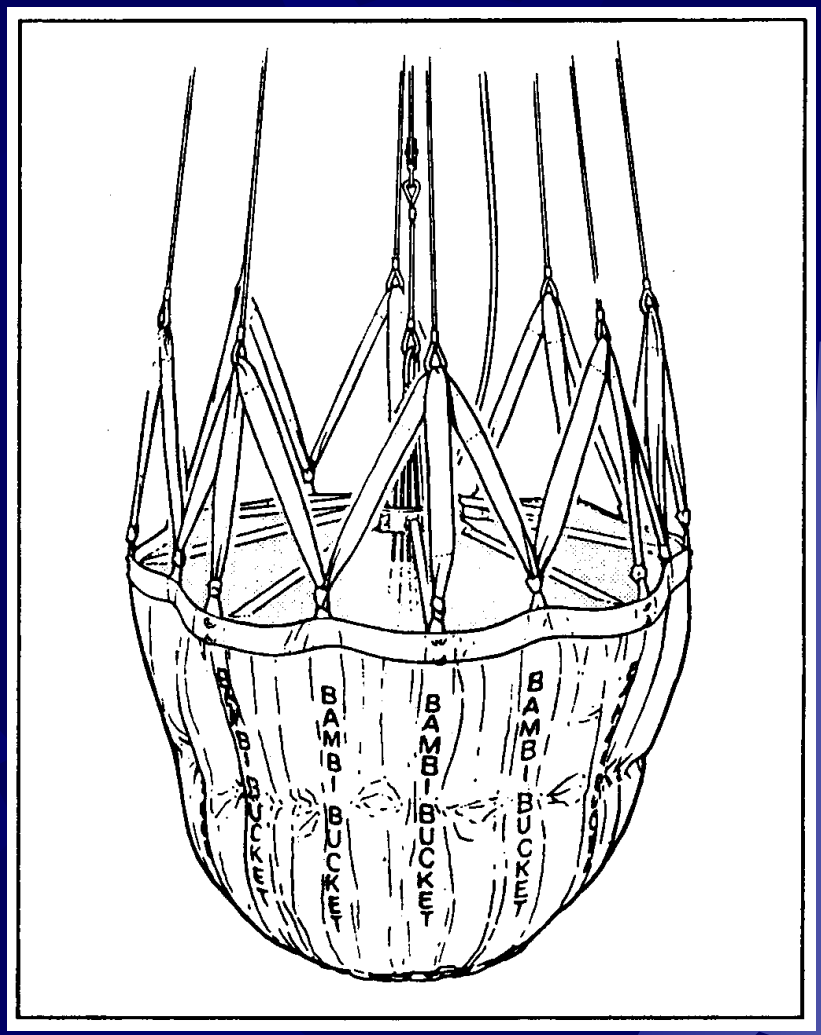
45’ long line (estimate) 50 lbs.

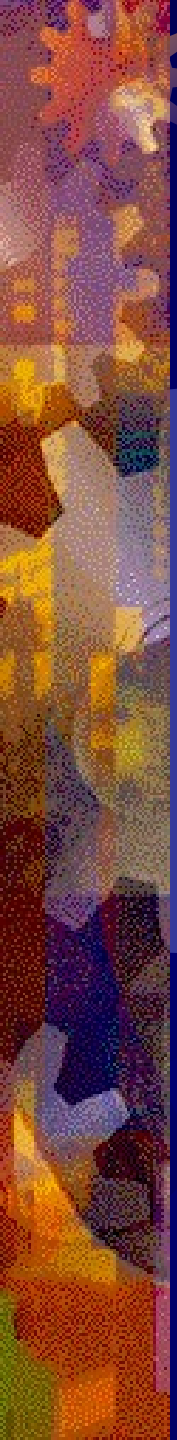
Empty Height 58 in.

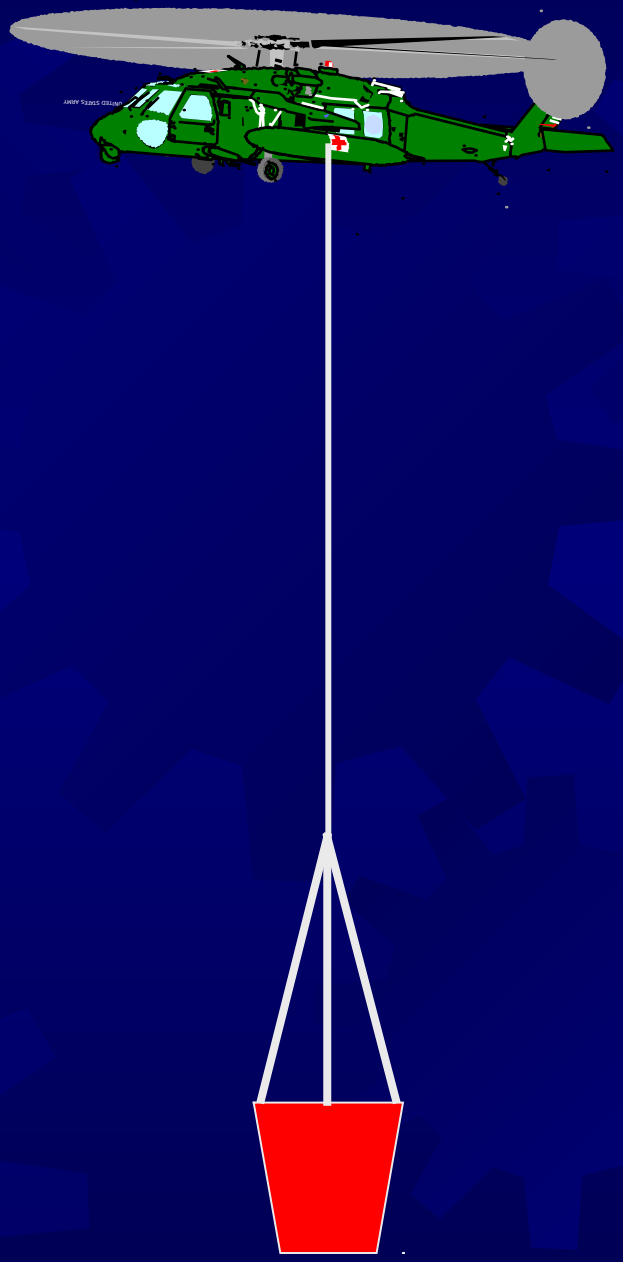
Capacity

Max 760 gal.

Min 532 gal.





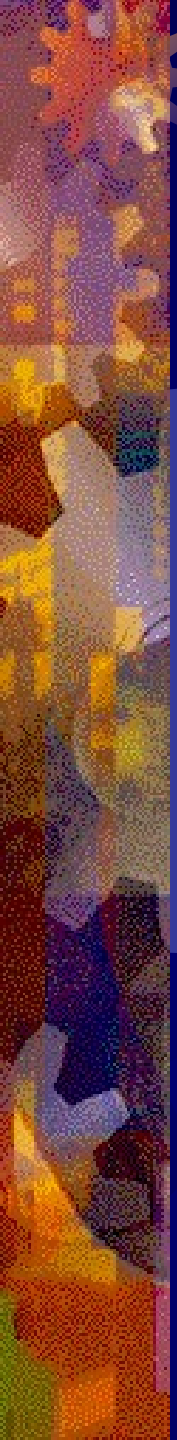


45’

23’

Total length 68’

You fill the bucket either by tipping it (wit
valve closed) or by sinking it (with the va



There are two methods by which the pilot can vary the fill capacity of the bucket:

1. Slow lift / fast lift
2. Cinch Strap

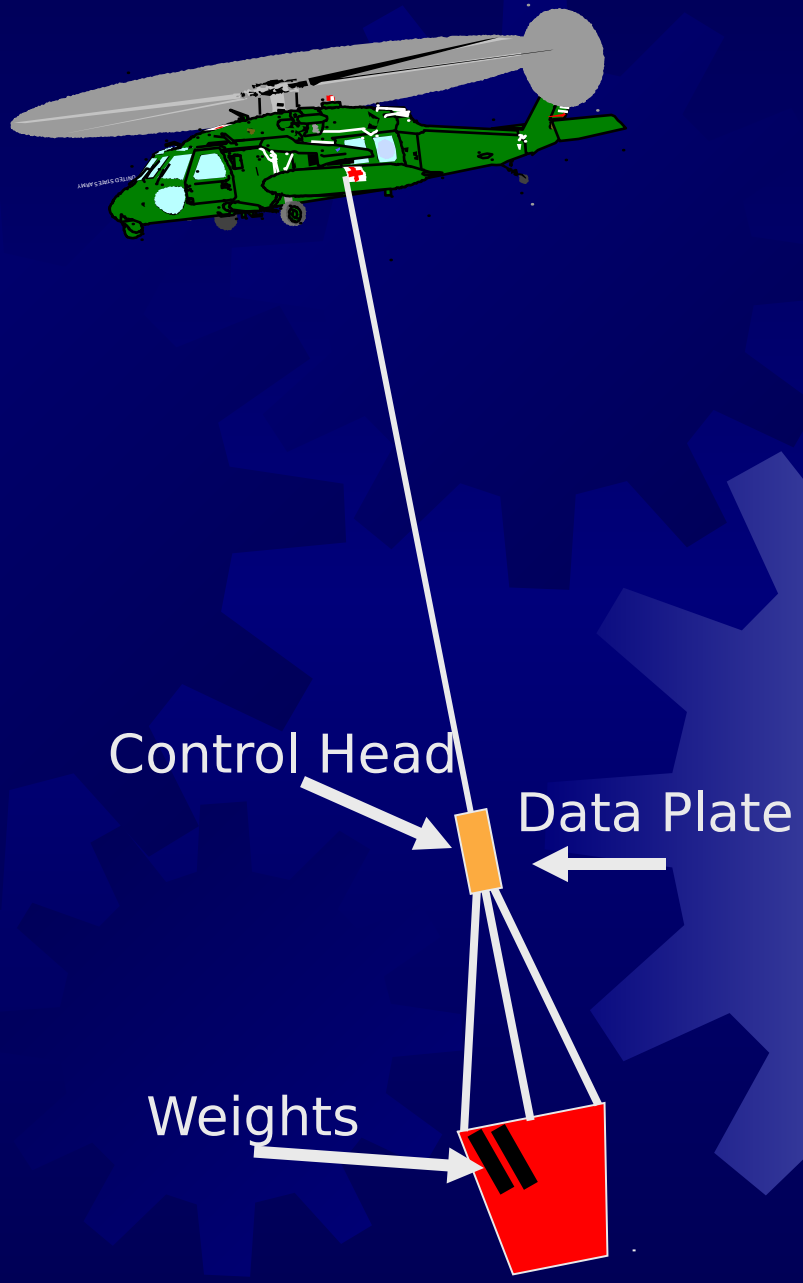
Varying the speed of the lift is often the best way to adjust the volume. Adjusting the cinch strap will change the overall length of the system and may require adjusting the IDS.

The Bambi Bucket should be suspended from the helicopter in such a way that the data plate on the control head faces aft and the weights on the bucket face forward.

You can fly with the valve open or closed as you prefer. But during landings and takeoff, it should be closed to protect the bottom valve seal.

Vne – 90 knots

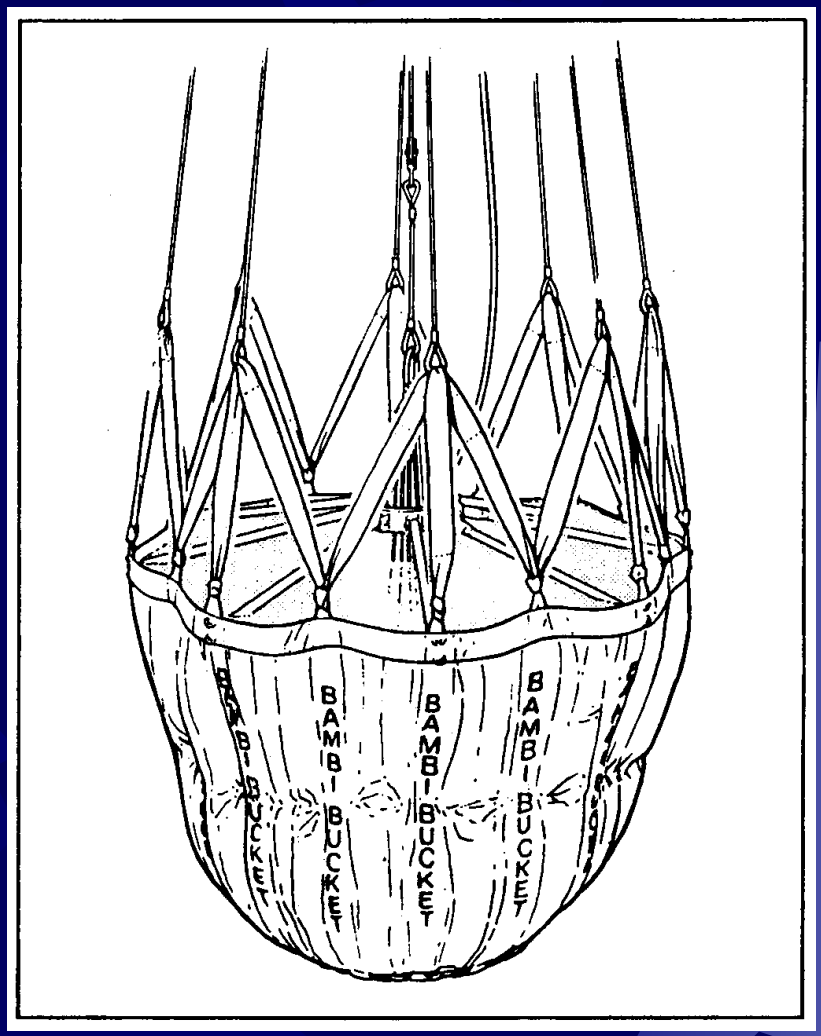
- reference NGB AWP



Flying Empty

The BAMBI BUCKET has been flown at speeds up to 110 mph and has proven stable at all speeds.

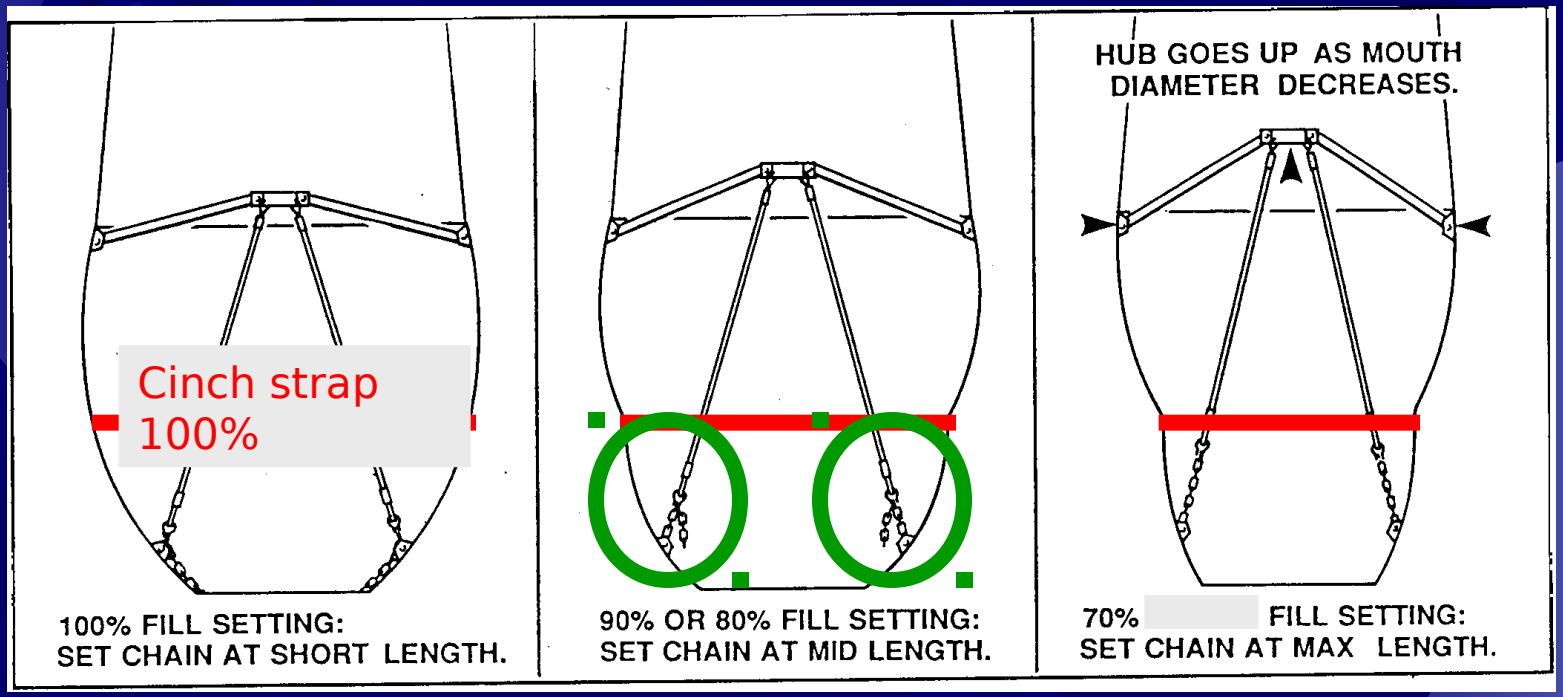
This is the only statement in the Operator’s manual reference V_{ne} or air airspeed.



Flying Full

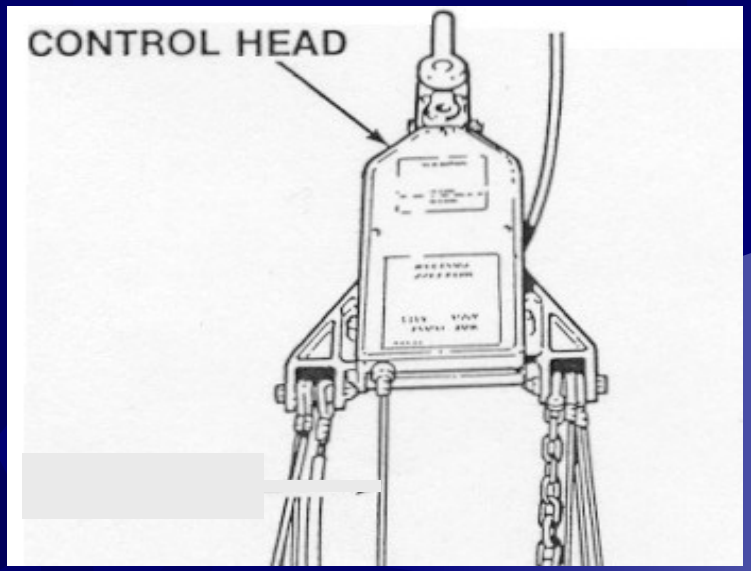
The dead weight of the load ensures different handling characteristics than when flying empty. You will notice that the BAMBI BUCKET does not “pulse” or “throb” under load in flight

The instant deployment system (IDS) adjustment chain must be adjusted when using the cinch strap to reduce bucket volume

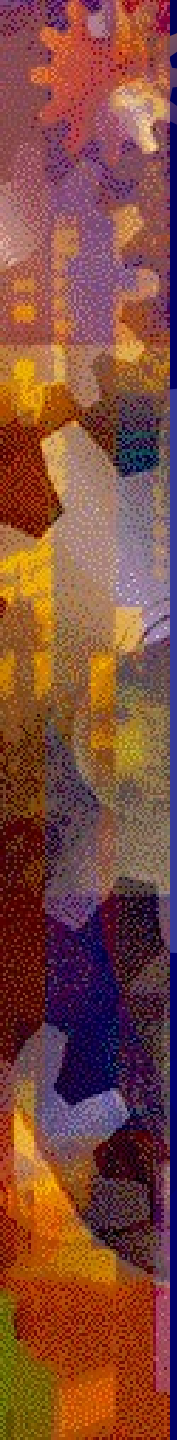


FSS

The recommended landing procedure is to allow the bucket to touch down ahead of the helicopter and then maintain tension on the suspension lines by backing up slowly.



Do not release the control head from the cargo hook while hovering.

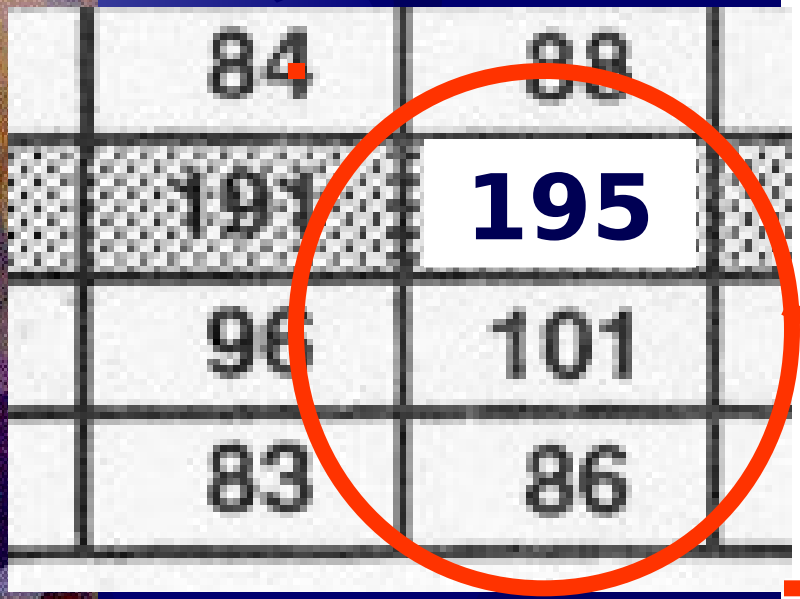


Weight & Balance (W&B 665 Bambi T-Valve.xls)

Performance Planning (PPC Bambi T Valve.doc)

USFS Load Calculation (Load Calc Bambi. xls)

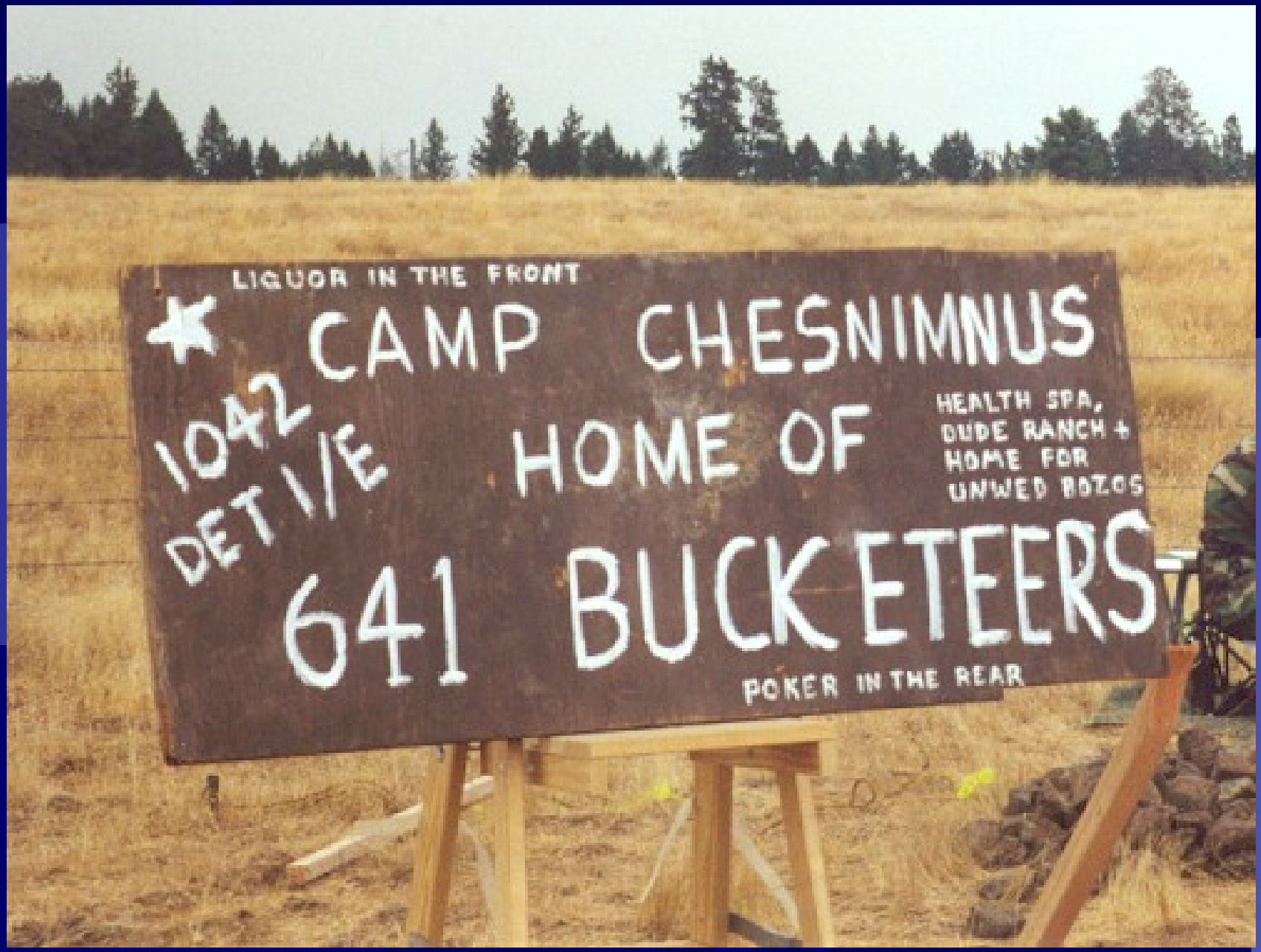
PA 6000’
FAT +25 C
MGW OGE 19,500

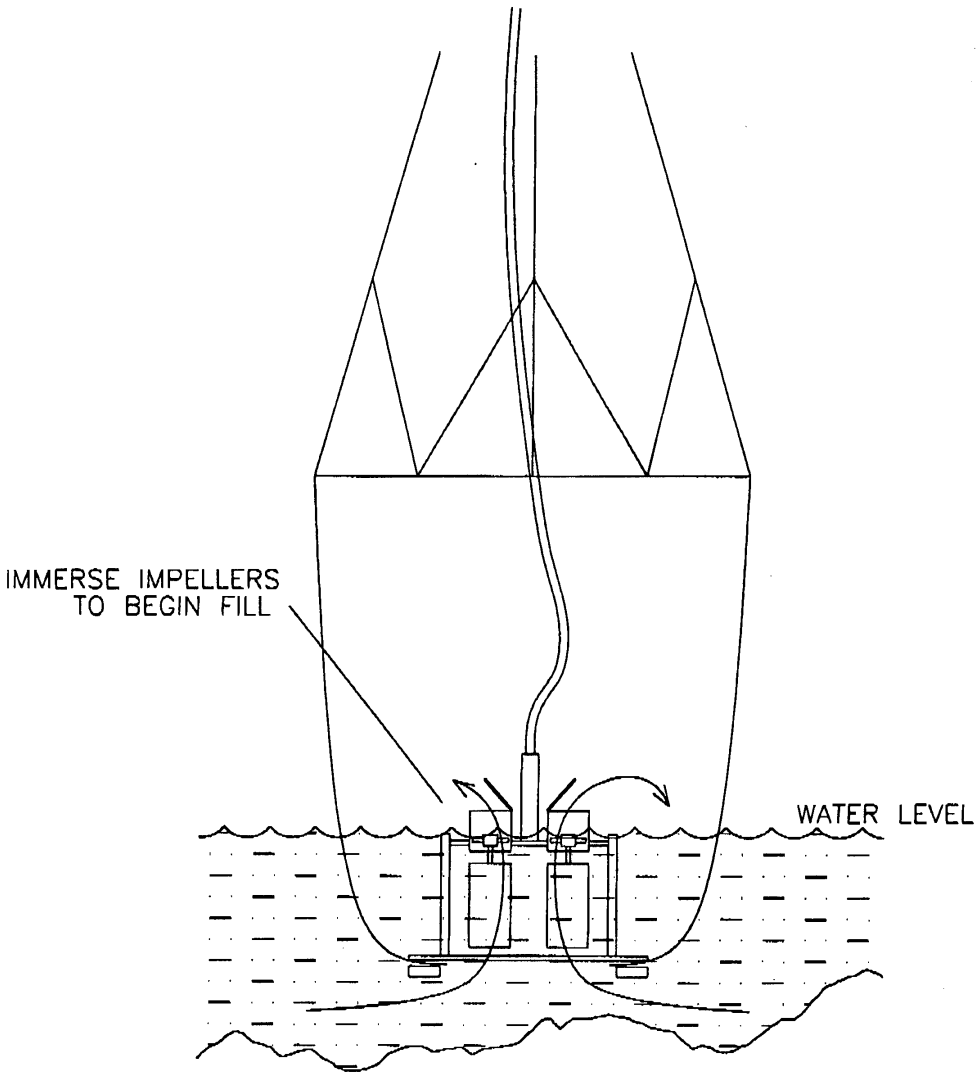


MAXIMUM OGE HOVER WEIGHT AND TORQUE REQUIRED
ANTI-ICE OFF T700-GE-701C ENGINE (CONTINUED)

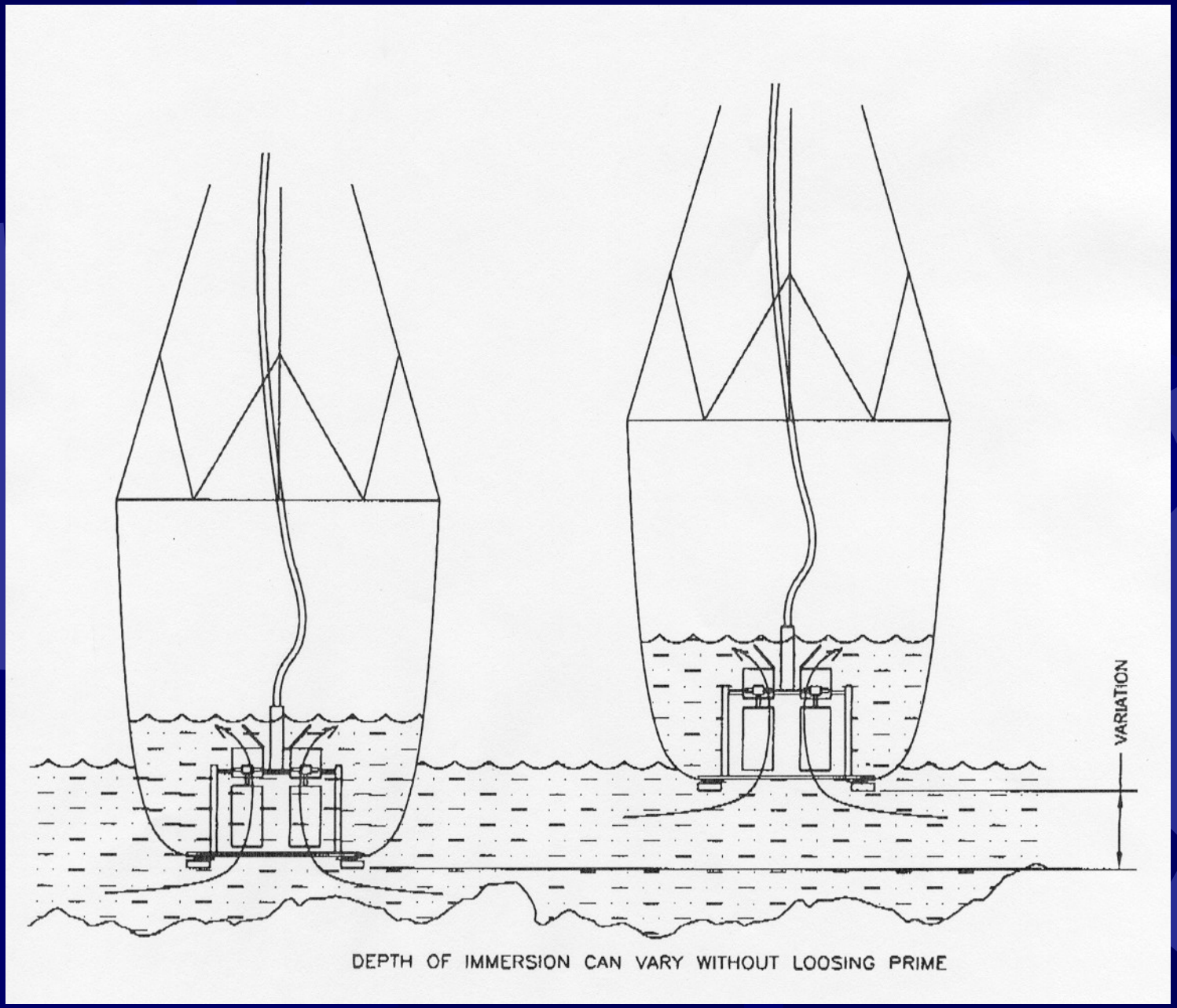
HP ~FT	ATF *	FREE AIR TEMPERATURE ~°C 10		15		20		25	
		1.0	0.9	1.0	0.9	1.0	0.9	1.0	0.9
0	GW ~ 100 LB	220	220	220	220	220	220	220	220
	Q ~ OGE ~ %	105	105	105	105	106	106	107	107
	Q ~ IGE ~ %	90	90	91	91	92	92	92	92
1000	GW ~ 100 LB	220	220	220	220	220	220	220	220
	Q ~ OGE ~ %	106	106	107	107	108	108	109	109
	Q ~ IGE ~ %	92	92	92	92	93	93	94	94
2000	GW ~ 100 LB	220	220	220	220	220	220	220	217
	Q ~ OGE ~ %	109	109	109	109	110	110	111	109
	Q ~ IGE ~ %	93	93	94	94	95	95	95	94
3000	GW ~ 100 LB	220	220	220	218	220	214	219	209
	Q ~ OGE ~ %	111	111	111	111	113	108	114	105
	Q ~ IGE ~ %	95	95	96	95	96	93	97	90
3500	GW ~ 100 LB	220	218	220	214	219	210	215	205
	Q ~ OGE ~ %	112	111	113	109	113	106	111	103
	Q ~ IGE ~ %	96	95	97	93	97	91	95	88
4000	GW ~ 100 LB	220	214	217	210	214	206	211	201
	Q ~ OGE ~ %	114	109	113	106	111	104	109	101
	Q ~ IGE ~ %	97	93	96	91	95	89	93	87
4500	GW ~ 100 LB	216	210	213	206	210	202	207	197
	Q ~ OGE ~ %	112	107	111	104	109	102	107	99
	Q ~ IGE ~ %	96	92	94	90	93	88	91	85
5000	GW ~ 100 LB	212	206	209	202	206	198	203	194
	Q ~ OGE ~ %	110	104	109	102	107	100	105	97
	Q ~ IGE ~ %	94	90	92	88	91	86	90	83
5500	GW ~ 100 LB	208	202	205	198	202	195	199	190
	Q ~ OGE ~ %	108	103	106	100	105	98	102	95
	Q ~ IGE ~ %	92	88	91	86	89	84	88	82
6000	GW ~ 100 LB	204	198	201	195	199	191	195	186
	Q ~ OGE ~ %	106	101	104	98	103	96	101	93
	Q ~ IGE ~ %	90	87	89	85	88	83	86	80

* GW ~ 100 LB = GW DIVIDED BY 100 LB

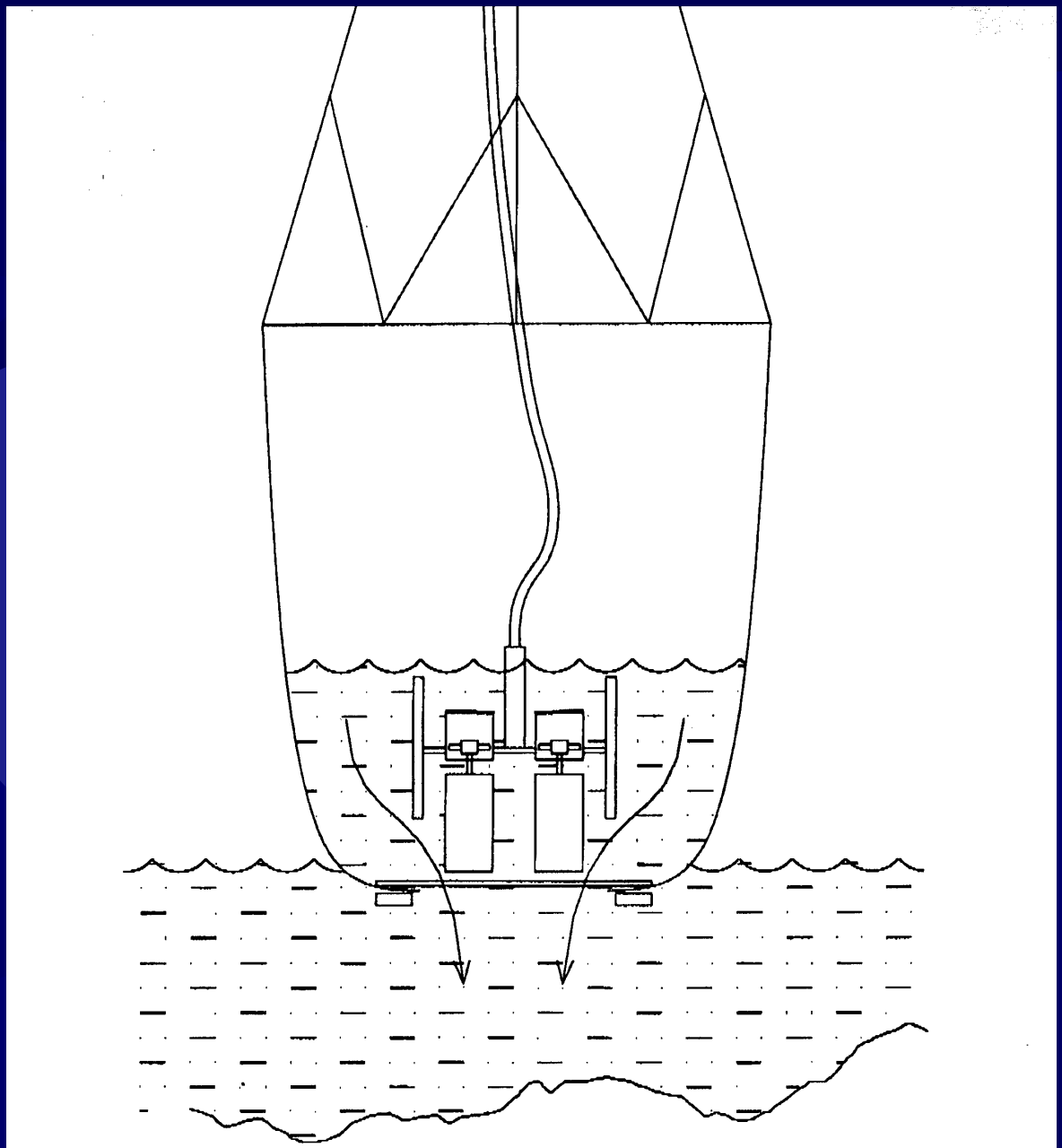

LIQUOR IN THE FRONT
CAMP CHESNIMNUS
1042
DET 1/E
HOME OF
HEALTH SPA,
DUDE RANCH +
HOME FOR
UNWED BOZOS
641 BUCKETEERS
POKER IN THE REAR



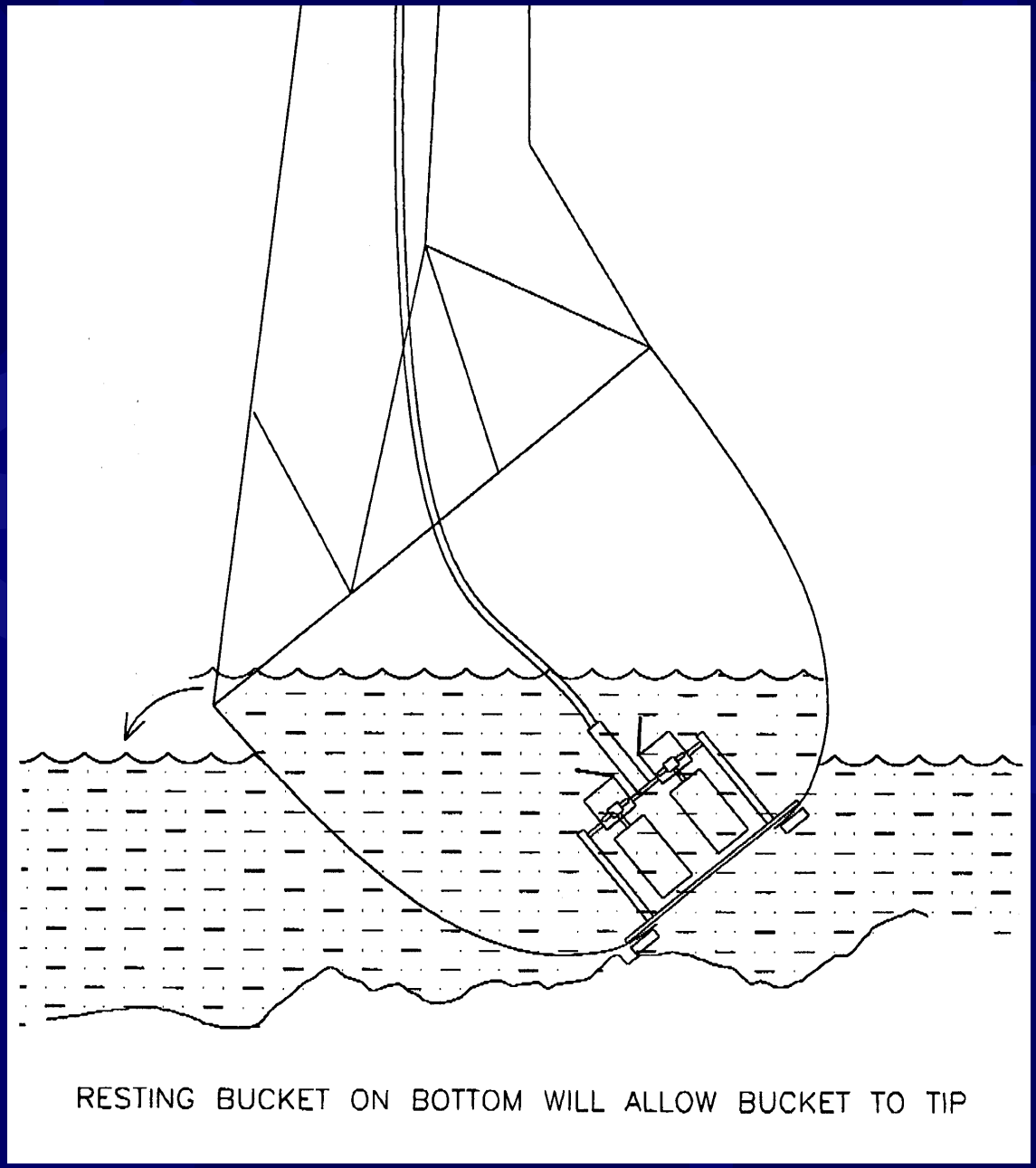
ESTABLISH PRIME BY IMMERSING IMPELLERS



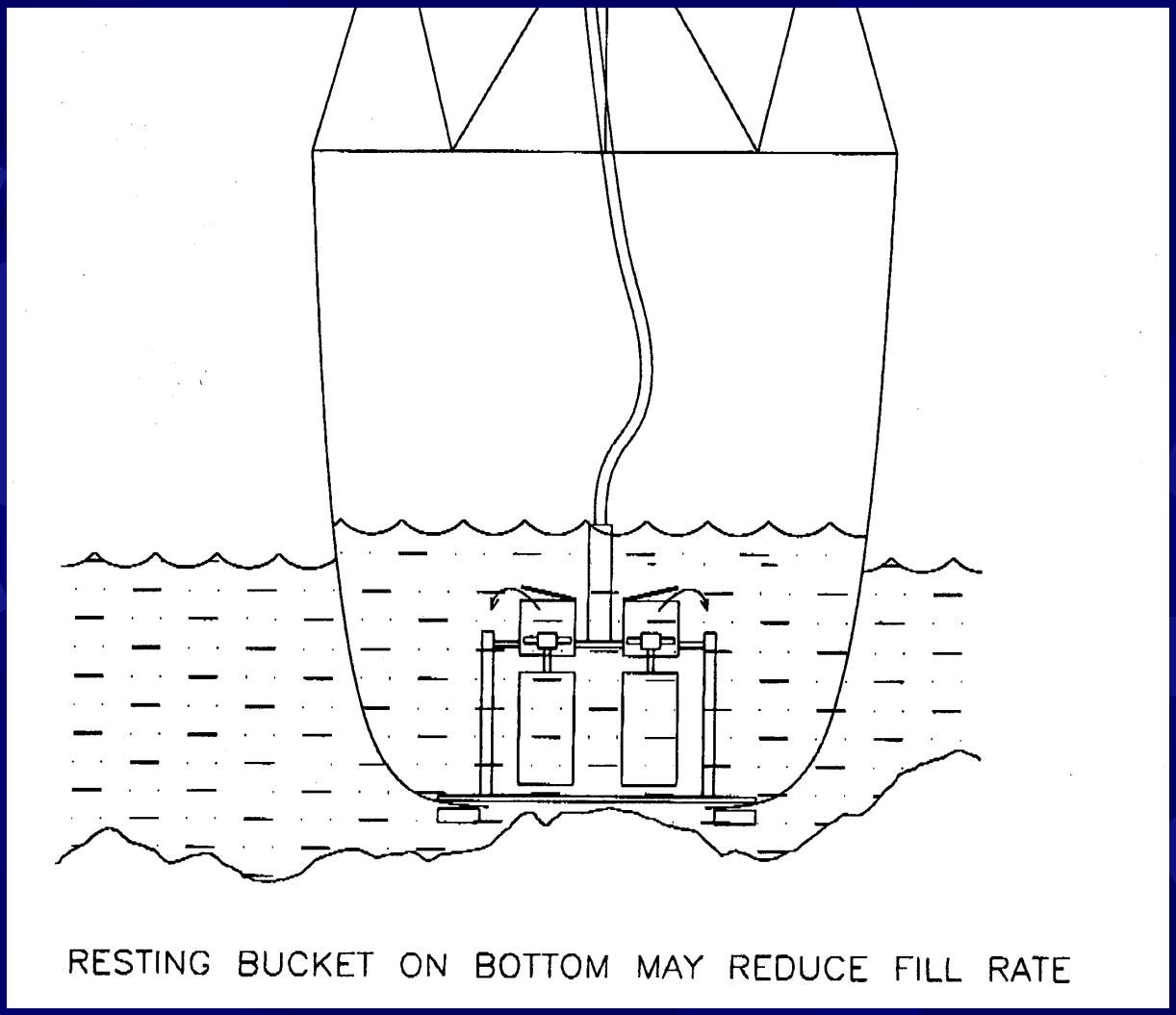
DEPTH OF IMMERSION CAN VARY WITHOUT LOOSING PRIME



RE–ESTABLISH PRIME BY MOMENTARILY OPENING VALVE

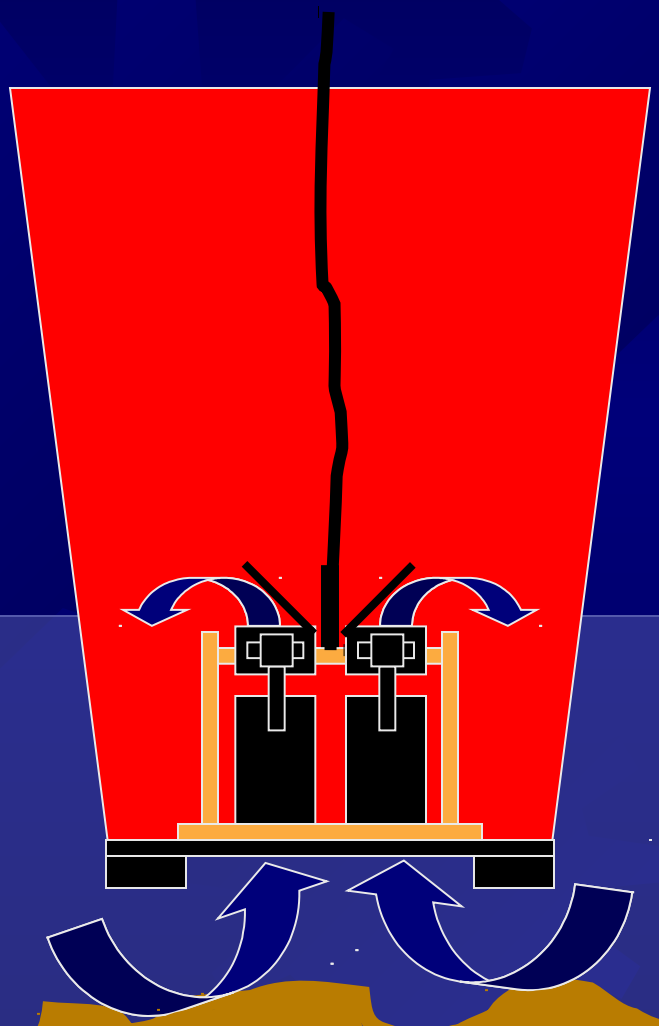


RESTING BUCKET ON BOTTOM WILL ALLOW BUCKET TO TIP



RESTING BUCKET ON BOTTOM MAY REDUCE FILL RATE

“Power Fill”

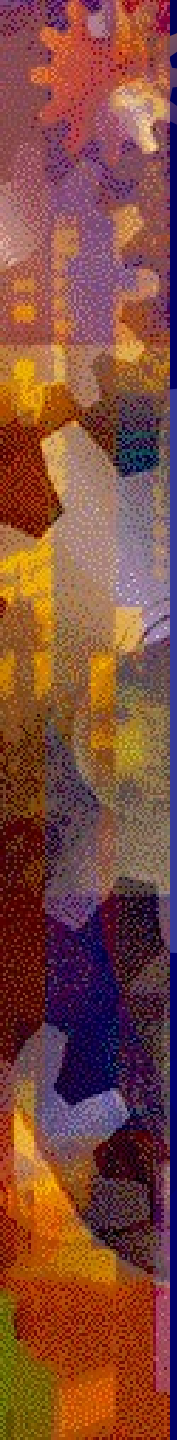


Immerse impellers
begin fill.

Water Level

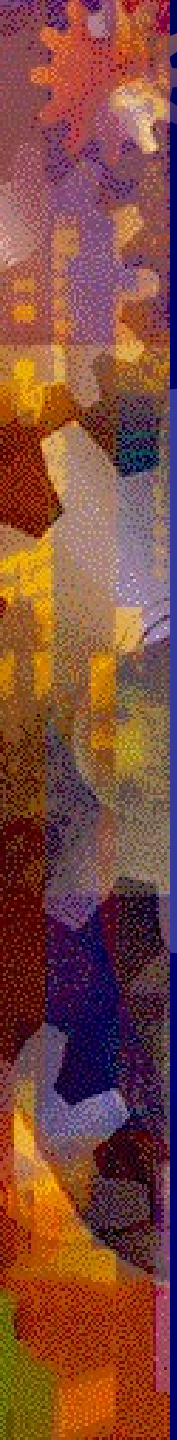
Fire Sock

The Fire Sock is a specially designed dispersal accessory for the Bambi Bucket to increase uniformity, length and width of the drop pattern by spreading the load (water or foam) over a wider area with greater consistency.



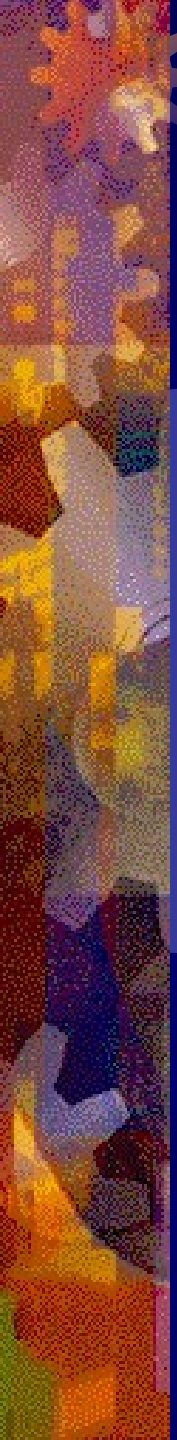
WARNING

It is absolutely essential that the ballast fa
In flight. This will avoid twisting of the sus



WARNING

Do not drag the bucket across the ground.
damage the Torrentula Valve and might cau



WARNING

If using a second shackle it must have a lo equivalent to the top shackle supplied wit

If using a swivel hook, operate in the locke to assure the ballast is always facing forwa

When filling the BAMBI, do not execute an degree pedal turn with the helicopter clos while towing the bucket. There is the dan suspension lines could get caught on a rea resulting in dynamic rollover.

WARNING

Never drop water onto ground personnel a
Impact could result in injury.

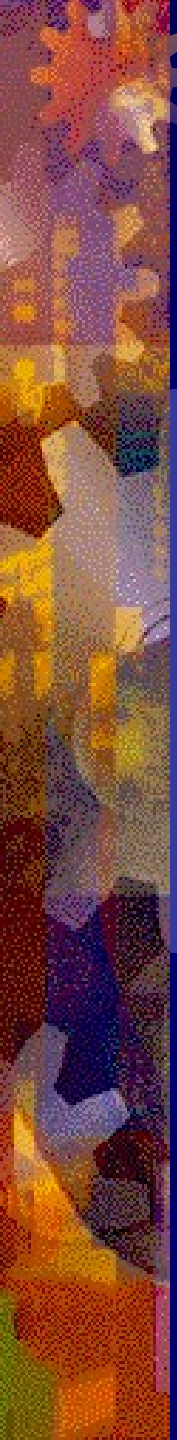
CAUTION

Never operate the bucket with the control head removed.

Make sure the Bambi Bucket shell does not rub against the valve on the inside of the bucket. This may impede the movement of the valve, and may damage the valve and/or control head.

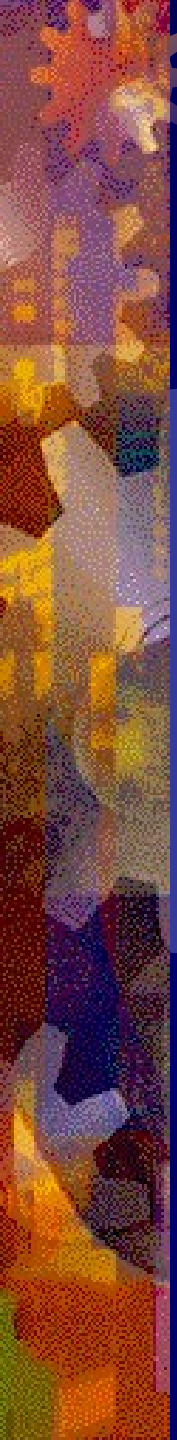
CAUTION

Make sure the bucket is laid out in the fully deployed position, with the IDS hub “out” before connecting the power. With the power connected, open and close the valve with the actuator switch to confirm correct operation.



CAUTION

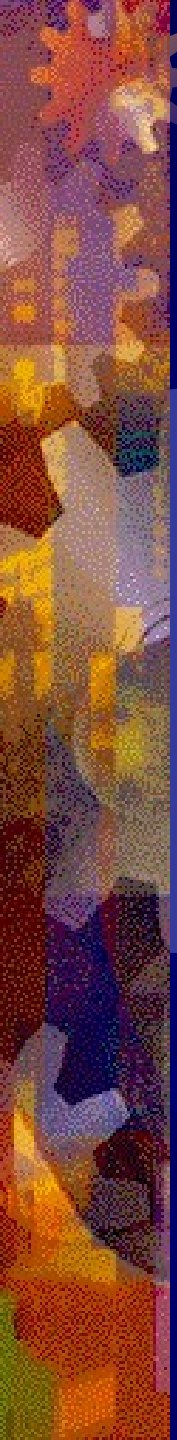
The Bambi Bucket may not be suitable for a direct hookup to the cargo hook. The actual hookup will be different for various aircraft, and operators must comply with all instructions and bulletins supplied by the aircraft manufacturer. It is the operator's responsibility to ensure that the Bambi Bucket is correctly fitted to the helicopter.



CAUTION

Do not operate the valve unless the Bambi Bucket is in the fully deployed configuration and the suspension cables and the actuator cable are laid out straight.
Operating the Torrentula Valve with the bucket folded may cause damage to the valve and/or control head.

To protect the bottom valve seal, we recommend that the valve is closed during takeoff and landing.

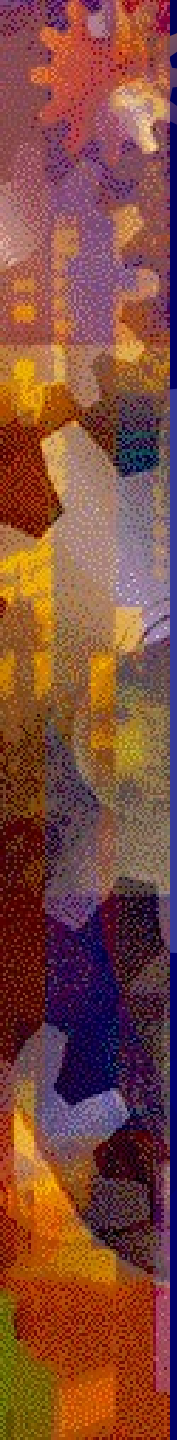


CAUTION

Do not tighten the cinch strap past the smallest load marking. Over tightening can damage the bucket shell.

Snagging the Bambi on submerged objects can result in bucket shell damage.

The lowest fill setting for all models is 70%. Over tightening the cinch strap can damage the bucket shell.



Pre-flight Inspection

1. Check to bottom chain and look for any tears in the fabric
   lockwire or tie wraps on the shackles.
2. Check for loose bolts around the bucket shell, IDS brackets
   (Cinch Strap) brackets at the midpoint, and wear strips at t
3. Check the diagonal “M-Straps” that connect the suspensio
   of the bucket and examine for any wear.
4. Visually check the multi-dump valve, particularly the seals
5. Check the Frusto-Conical Arrest System (FCAS or “cinch st
6. Check the suspension cables for frays, kinks, or loose swag
7. Check that the solid metal ballast bars are securely attach
8. Check the control head for secure fittings.

Report errors to CW5 Peter Davis, ORA

Peter.Davis@or.ngb.army.mil